OWNER'S MANUAL

MINI-E-BIKE™

For future reference, please fill in the important information below.

Serial Number
(Your serial number can be found inside the main hinge. Unfold the Mini-E-Bike™ to see it.)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Model Code (Printed on the end of your shipping carton.)

☐☐–☐☐☐☐☐☐–☐

Key Number

☐☐☐

Dealer Name: _____
Address: _____
City/State/Zip: _____
Telephone: _____
Contact: _____

This manual contains important safety, performance and maintenance information. Read the manual before taking your first ride on your new Mini-E-Bike™, and keep the manual handy for future reference.

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1. ABOUT THIS MANUAL

WHY YOU SHOULD READ THIS MANUAL

This manual was written to help you get the most performance, comfort, enjoyment and safety when riding your new Mini-E-Bike™. The manual describes specific care and maintenance procedures that help protect your warranty and ensure years of trouble free use. Please pay particular attention to the section on battery charging and maintenance.

It is important for you to understand your new Mini-E-Bike™, its features and its operation, so you get maximum enjoyment with maximum safety. By reading this manual before you go on your first ride, you'll know how to get the most from your new Mini-E-Bike™.

It is also important that your first ride on a new Mini-E-Bike™ be taken in a controlled environment, away from cars, obstacles, and other cyclists.

GENERAL WARNING:

Cycling can be a hazardous activity even under the best of circumstances. Proper maintenance of your Mini-E-Bike™ is your responsibility as it helps reduce the risk of injury. This manual contains many "Warnings" and "Cautions" concerning the consequences of failure to maintain or inspect your Mini-E-Bike™. Many of the Warnings and Cautions say "you may lose control and fall". Because any fall can result in serious injury or even death, we do not repeat the warning of possible injury or death whenever the risk of falling is mentioned.

IMPORTANT SAFETY INFORMATION

Your Mini-E-Bike™ can provide many years of service, fun and fitness - if you take responsibility for your own safety. Understand the features of your Mini-E-Bike™ and become aware of the challenges that you will meet on the road. There is much that you can do to protect yourself while riding. We will offer many recommendations and safety tips throughout this manual. The following are those that we feel are most important.

Always Wear A Helmet!

Helmets significantly reduce the number and severity of head injuries. Always wear a helmet that complies with your state laws when riding the Mini-E-Bike™. Check with your local police department for requirements in your community. Do not wear loose fitting clothing that can become tangled in the moving parts of the Mini-E-Bike™. Wear sturdy shoes and eye protection. Also check your state laws concerning other protective gear that may be required when riding the Mini-E-Bike™.

WARNING:

Not wearing a helmet significantly increases the chance of serious injury or death in a crash. Always wear a helmet, eye protection and appropriate apparel when you ride.

Know your Mini-E-Bike™!

Your new Mini-E-Bike™ incorporates many features and functions that have never been built into a bicycle before. Read this manual thoroughly to understand how those features enhance your riding pleasure and safety.

Ride Defensively!

One of the most frequent cycling accidents occurs when the driver of a parked car opens his door into a rider's path. Another common occurrence is when a car or another cyclist moves suddenly into your path. Always be aware of other vehicles around you. Do not assume that the driver or the other cyclist sees you. Be prepared to take evasive action or stop suddenly.

Make Yourself Easy To See!

Make yourself more visible by wearing bright reflective clothing. Keep your reflectors clean and properly aligned. Signal your intentions so that drivers and other cyclists can anticipate your actions.

Ride Within Your Limits!

Take it slow until you are familiar with the riding conditions that you encounter. Be especially careful in wet conditions as traction can be greatly reduced and brakes less effective. Never ride faster than conditions warrant or beyond your riding abilities. Remember that alcohol, drugs, fatigue and inattention can significantly reduce your ability to make good judgements and ride safely.

Keep Your Mini-E-Bike™ In Safe Condition

Follow the inspection and maintenance guidelines beginning on page 3. Check critical safety equipment before each and every ride.

Know The Law

Cyclists are required to follow the rules of the road. Additionally, some communities regulate the use of motorized bicycles regarding minimum age requirements and necessary equipment. Check with your local police department for specific details.

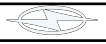
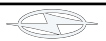
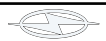
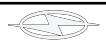
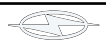
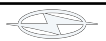
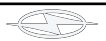
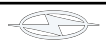
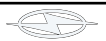
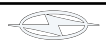
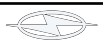
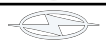
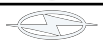
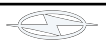
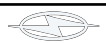
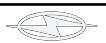
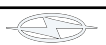
Offroad Riding

Offroad riding is not recommended because the Mini-E-Bike™ tires are for street use only. Dust and extreme impacts from offroad riding can cause electrical system problems.

INSPECTION AND MAINTENANCE

For your safety and enjoyment and to insure a long life for your Mini-E-Bike™, inspect and maintain your Mini-E-Bike™ regularly. Use the table below for guidance. It is very important that you check certain systems and components before each and every ride. The proper condition and function of these systems is critically important for your safety.

Your Mini-E-Bike™ should be returned to your servicing dealer at least once a year for a complete and thorough inspection and tune up. If a problem arises that is not described below, discontinue riding the Mini-E-Bike™ and return it to your servicing dealer immediately. For more information about service and maintenance, please refer to page 32.

Refer to Page	Component or Condition	Inspect before every ride	Inspect periodically*	Clean and/or lubricate	Adjust/Tighten	Repair/Replace if necessary
30	Tire pressure (60-65 psi)					
18	Tire wear/damage					
26	Brake pad adjustment					
13	Handlebar quick release adjustment					
6	Controls and displays					
13	Seat post quick release adjustment					
26	Brake pad wear					
26	Brake cable tension/wear					
34	Spoke tension					
18	Wheel true					
7	Hub bearings					
33	Chain lubrication					
28	Derailleur adjustment					
2	Reflectors					
8	Battery and charger					
33	Headset					
34	Bottom bracket					
33	All bolts, nuts, and mounting hardware					

*Every 5 to 10 rides depending on length and conditions of the ride.

2. OPERATIONAL INSTRUCTIONS

Please read and understand these instructions completely before operating your Mini-E-Bike™ to prevent serious injury to yourself and others, and to prevent damage to the bike.

IMPORTANT NOTICES

- **Always recharge the battery pack immediately after each use. Failure to do so may damage the battery.**
- **The charger can remain plugged-in for trickle-charge purposes during long periods of storage.**
- **For storage periods over 3 months, the battery pack should be checked and fully recharged every 3 months.**
- **Keep the battery compartment lid closed and locked during use.**
- **Always remove the key from the battery compartment lid before operating the Mini-E-Bike™. Never ride the Mini-E-Bike™ with the key in the lid lock.**

LED CODES

The three state-of-charge LEDs on the throttle controller indicate battery state of charge. The Mini-E-Bike™ uses these LEDs to alert you to particular conditions. The following chart describes these signals and their various meanings.

CODE	MEANING	LEDs
System ON	Whenever the power knob is turned ON, the system performs a series of checks. This signal indicates that the Mini-E-Bike™ is ON and ready for operation.	The charge level LEDs cycle four times in sequence.
Battery state-of-charge	The battery has 100% to 84% of run time remaining.	Green LED on.
	84% to 16% of run time remaining.	Yellow LED on.
	Less than 15% of run time	Red LED on.
Very low battery	The state-of-charge battery charge is below the minimum level. The motor is shut off to protect the battery. Charge the battery immediately after use.	Red LED flashes

RIGHT HAND CONTROLS

Power On/Off

- Turn the power knob **(**A**, Figure 1)** on the throttle control clockwise to the ON position.
- The three state-of-charge LEDs cycle four times in sequence to indicate the system and controls are ready for operation.

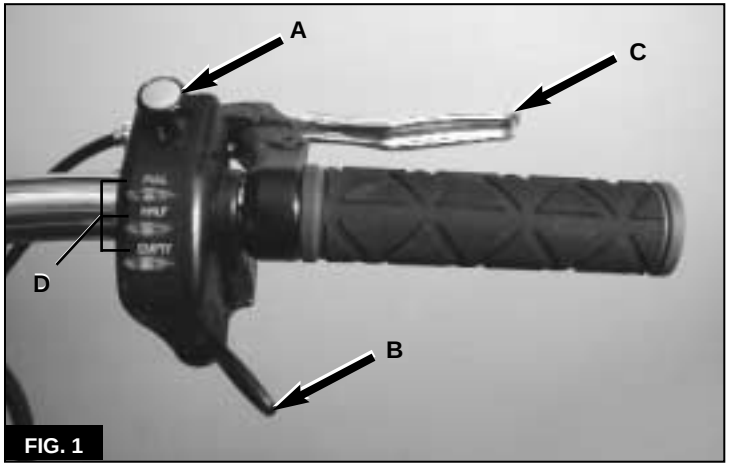


FIG. 1

Throttle
Press the throttle lever **(**B, **Figure 1)** with your thumb to apply power to the motor while your are pedaling. Please note that the motor only operates while you are pedaling. Power to the motor is cutoff three seconds after you stop pedaling.

Rear Brake Lever
The rear brake is activated by squeezing the right brake lever. **(**C, **Figure 1)**.

Battery Charge Level
The three state-of-charge LEDs **(**D, **Figure 1)** on the throttle control indicate the battery charge level.

- Green (or full) indicates the battery is 100% to 84% charged.
- Yellow (or half) indicates the battery is 84% to 16% charged.
- Red (or empty) indicates the battery is less than 15% charged.

The motor automatically shuts off when the battery is below a preset limit to help extend battery life. The red LED flashes to signify the motor is off and the battery must be recharged. **Recharge the battery pack immediately after use. Failure to do so may damage the battery.**

LEFT HAND CONTROLS

Twist Grip Gear Selector
By twisting this grip **(**A, **Figure 2)** while pedaling, you can select any one of five gears on the rear wheel. The grip is labeled with the corresponding gear selection.

Front Brake Lever
The front brake is activated by squeezing the left brake lever **(**B, **Figure 2)**.

WARNING:
Sudden or excessive application of the front brake may pitch the rider over the handlebars, causing serious injury or death.

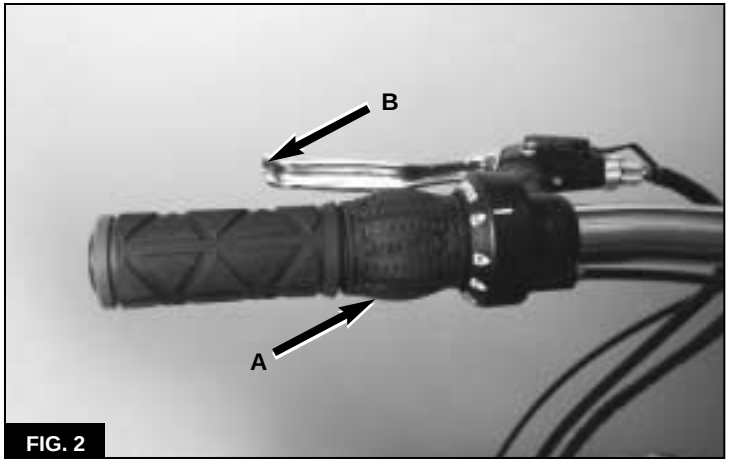


FIG. 2

BATTERY MANAGEMENT

Always recharge the battery pack immediately after each use. Failure to do so may damage the battery. The charger can remain plugged-in for trickle-charge purposes during long periods of storage. For storage periods over 3 months, the battery pack should be checked and fully recharged every 3 months. Always turn off the master switch when the Mini-E-Bike™ is not in use.

Battery Pack Removal

1. Unlock the lid on the battery compartment and open the lid.
2. Turn the master switch **(**A, **Figure 3)** to the OFF (O) position.
3. Release the battery latch **(**B, **Figure 3)**.
4. Grasp the battery pack handle **(**C, **Figure 3)** and pull the battery pack straight up and out of the battery compartment.

NOTE:

If the seat is set low on the frame, the tip of the seat could interfere with battery removal. If this is the case, open the seatpost quick release and rotate the seat 90 degrees.

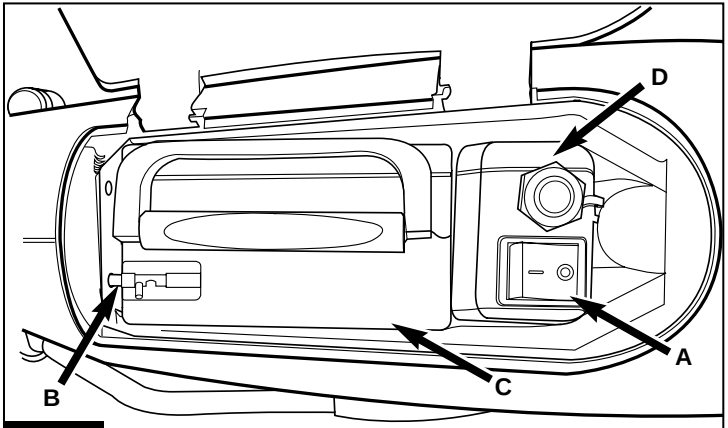


FIG. 3

Battery Pack Installation

1. Position the battery pack over the battery compartment so contacts on the bottom of the battery pack **(Figure 4)** sit above the terminals at the front of the battery compartment.

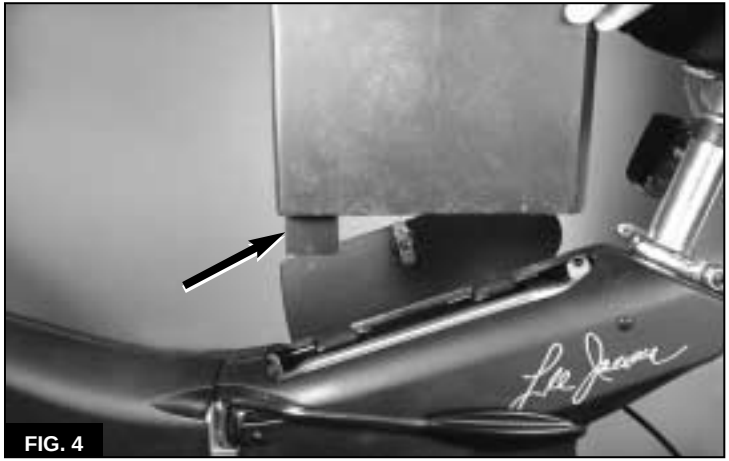


FIG. 4

2. Lower the battery pack straight down into the compartment until it bottoms. When properly installed, the battery pack will sit down inside the compartment.

NOTE:

If the battery pack protrudes above the top of the battery compartment, the battery has been installed backwards. Remove the battery pack, rotate the battery pack 180 degrees, and reinsert it so the contacts on the bottom of the battery pack engage the terminals at the front of the battery compartment.

3. Secure the battery in place with the battery latch **(**B, **Figure 3)**.
4. Close and lock the battery compartment lid.

Charging the Battery

The battery can be charged while it is on-board the Mini-E-Bike™ or when removed from the battery compartment.

1. Remove the cap **(**D, **Figure 3)** from the charge port on the battery.
2. Plug the 3-pin charge cord **(**A, **Figure 5)** into the charge port on the battery pack. Press the lock bezel **(**B, **Figure 5)** down onto the port and rotate the bezel clockwise until it locks into place.
3. Plug the female end of the power cord into the charger **(Figure 6)**, and plug the male end of the cord into a standard U.S. 110/60 cycle wall socket.

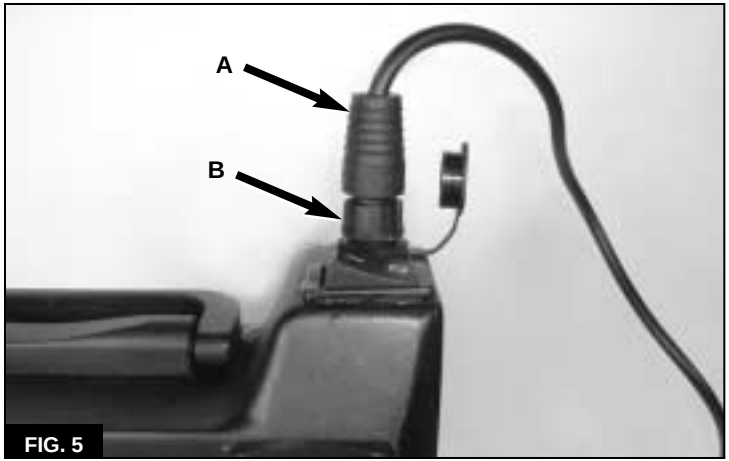


FIG. 5

FIG. 6

4. Turn the master switch to the ON (-) position. The LED on the charger indicates the state of charge.

- Red means the charger power is ON.
- Yellow means the battery is being charged.
- Green means the battery is fully charged.

NOTE:
If the master switch is not on, the battery will not charge.

5. When the battery is fully charged, turn the master switch to the OFF (o) position and unplug the power cord from the wall socket.

6. Turn the lock bezel **(**B, **Figure 5)** 1/2 turn counterclockwise, and remove the plug from the charge port.

7. Fit the cap back onto the charge port, and reinstall the battery into the battery compartment.

WARNING:
Keep the charger and battery pack away from water to prevent electrical shock and shorting. The charger is intended for indoor use only.

OPERATING THE MINI-E-BIKE™

1. Unlock the battery compartment and open the lid.
2. Turn the master switch **(**A, **Figure 3)** to ON. The master switch uses the international symbols for on and off. The line

(-) on the master switch indicates the ON position. The letter "O" indicates OFF.
3. Close and lock the battery compartment lid.
4. Turn the power knob **(**A, **Figure 1)** on the throttle control to ON. The state-of-charge LEDs cycle four times in sequence and then indicate the current battery state-of-charge. The Mini-E-Bike™ is powered and ready for use.
5. Roll the Mini-E-Bike™ forward to lower it from the centerstand.
6. Start pedaling the Mini-E-Bike™. Once your speed reaches approximately 2.0-2.5 miles per hour (3-4 km per hour), apply the throttle. The motor turns on and provides additional power to the rear wheel as long as you are pedaling.
7. Once you reach your destination, turn off the power knob **(**A, **Figure 1)** and then turn off the master switch **(**A, **Figure 3).**

Pedal Assist

Your Mini-E-Bike™ is a pedal-assist bike. That is, the motor only operates while you are pedaling. A sensor on the right side monitors the motion of the crank and signals the controller when you are pedaling. The sensor glows red when it detects crank rotation. To start from a stop, you must push off and pedal. Power is not applied to the motor until your speed equals 2.0-2.5 miles per hour (3-4 km per hour) even if you are applying the throttle. During operation, the controller automatically cuts power to the motor three seconds after you stop pedaling. When you wish to use the motor on your Mini-E-Bike™, you must pedal.

FOLDING/UNFOLDING

Folding the Mini-E-Bike™

1. Raise the Mini-E-Bike™ onto the centerstand.
2. Turn off the power knob on the throttle control and turn off the master switch on the battery pack.
3. Remove the battery pack. This lightens the Mini-E-Bike™ considerably so it will be easier to lift.
4. Unlock the handlebar quick release lever **(**A, **Figure 7)**.

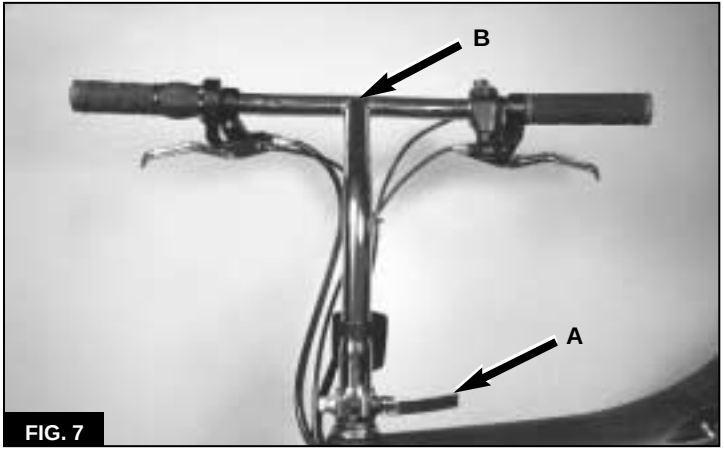


FIG. 7

5. Rotate the handlebar **(**B, **Figure 7)** 90 degrees clockwise so it faces the right side of the Mini-E-Bike™. Lock the handlebar quick release lever.

6. On the right side, rotate the pedal upward so it is perpendicular to the ground.
7. Release the lock lever from its clasp on the left side of the Mini-E-Bike™.
8. Rotate the lock lever **(**A, **Figure 8)** clockwise until it points forward. Pull the locknut and rotate the locknut **(**A, **Figure 9)** out away from the Mini-E-Bike™ until the nut clears the lock plate **(**B, **Figure 9)**.
9. Grasp the seat and the handlebar. Pivot the front half of the frame rearward around the hinge until the front wheel is beside the rear wheel **(Figure 10)**.

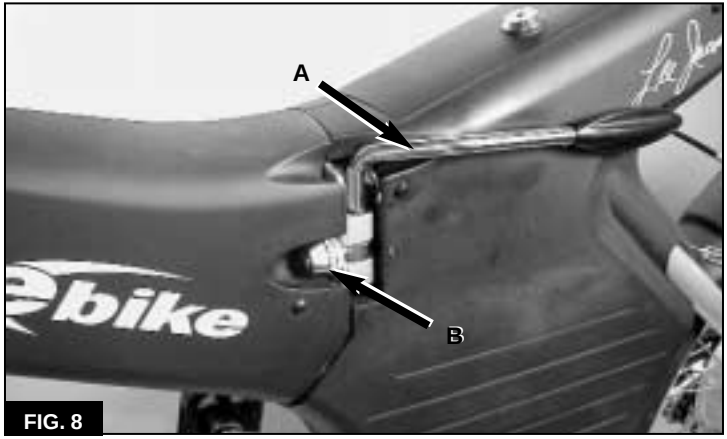


FIG. 8

10. Use the strap on the seatpost to secure the handlebar stem to the seatpost. This keeps the Mini-E-Bike™ securely folded.

CAUTION:
*Always use the strap to secure the handlebar stem to the seatpost when the bike is folded (**Figure 10)**. If you do not, your finger or hand could be pinched if the bike should unintentionally unfold while you are handling it.*

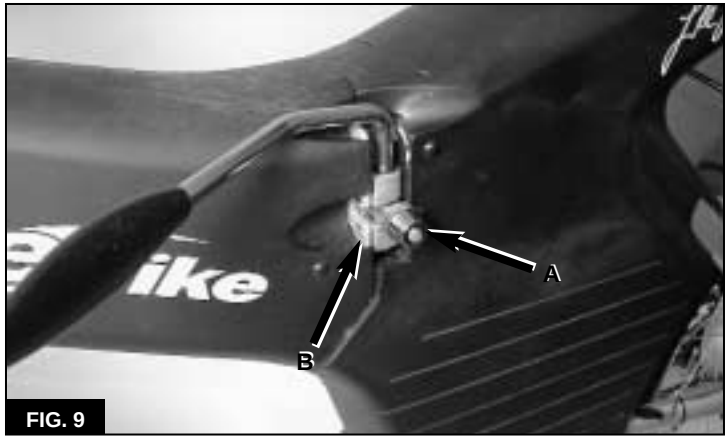


FIG. 9

Unfolding the Mini-E-Bike
1. Remove the strap from the handlebar stem. Wrap the strap around the seatpost.
2. Grasp the seat and the handlebar firmly. Pivot the front half of the frame forward until the hinge lock plate **(**B, **Figure 9)** closes against the lock bolt pivot.
3. Rotate the locknut **(**A, **Figure 9)** forward until the nut engages the lock plate as shown in B, **Figure 8**.

FIG. 10

4. Lock the hinge by rotating the lock lever **(**A, **Figure 8)** rearward until it presses against the side cover. Secure the lock lever in the clasp on the left side of the Mini-E-Bike™.
5. Rotate the right pedal down so it parallels the ground.

WARNING:

Be sure the handlebar quick release securely clamps the handlebar stem to the fork stem. An improperly adjusted handlebar quick release can produce instability that can cause loss of control and a fall.

6. Unlock the handlebar quick release lever. Rotate the handlebar counterclockwise until the handlebar is perpendicular to the bike's frame. Lock the handlebar quick release lever securely.
7. Reinstall the battery pack as described above.

QUICK RELEASE BINDER

Locked/Unlocked

The handlebar and seatpost on your Mini-E-Bike™ are secured with a quick release binder. While a quick release binder looks like a bolt with a lever on one end and a nut on the other, a quick release binder uses cam action to firmly clamp the handlebar or the seatpost in place.

On your Mini-E-Bike™, each quick release binder is installed so the lever is on the right side of the bike. The binder is properly locked when the lever curves around the handlebar stem (or seatpost) and points forward as shown in **Figure 11**.

FIG. 11

To unlock (open) a quick release binder, pull the lever out away from the handlebar as shown in **(**A, **Figure 12)**. To lock (close) the quick release binder, use the palm of your hand to press the lever forward to the locked position (**Figure 11).**

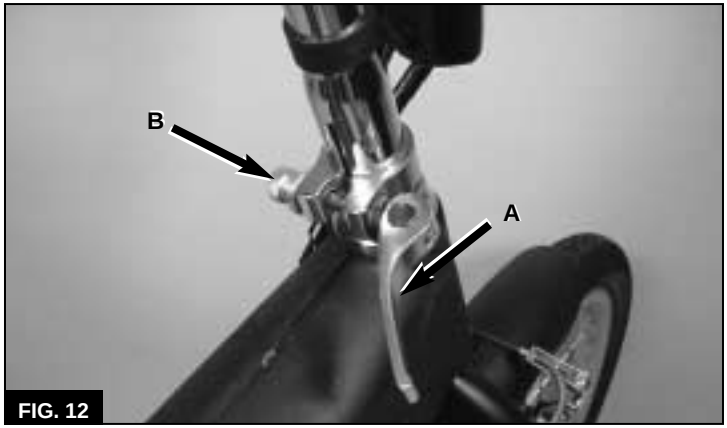


FIG. 12

WARNING:

Riding with an improperly tightened quick release binder can allow the handlebar or saddle to turn or move, which could cause you to lose control and fall. Therefore:

1. Ask your dealer to help you make sure you know how to correctly clamp your handlebar and seatpost in place.

2. Understand and apply the correct technique for clamping your a quick release binder.

3. Before you ride the Mini-E-Bike™, first check that the handlebar and seatpost are securely clamped in place.

Adjusting a quick release binder

The action of the quick release cam squeezes the collar around the handlebar or seatpost to hold each component securely in place. The amount of clamping force is controlled by the tension adjusting nut **(**B, **Figure 12)**.

CAUTION:

Holding the nut with one hand and turning the lever like a wing nut with the other hand until everything is as tight as you can get it will not clamp the handlebar or seatpost safely. The full force of the cam action is needed to clamp them securely.

Turning the tension adjusting nut clockwise while keeping the cam lever from rotating increases clamping force. Turning the nut counterclockwise while keeping the cam lever from rotating reduces clamping force. Less than half a turn of the adjusting nut can make the difference between safe clamping force and unsafe clamping force.

USING THE CENTERSTAND

1. To raise the Mini-E-Bike™ on the centerstand, perform the following:
   a. Use your foot to lower the centerstand until it rests on the ground.
   b. While stepping on the centerstand, simultaneously lift the seat and pull the Mini-E-Bike™ rearward until the centerstand locks in place.

2. To lower the Mini-E-Bike™ from the centerstand, roll the Mini-E-Bike™ forward and off the centerstand. The centerstand spring holds the stand up against the frame.

CARE AND CLEANING

Remove the battery pack before washing your Mini-E-Bike™.

WARNING:

Keep the battery pack and charger away from water to prevent electrical shock and damage to the charger or batteries.

Clean the Mini-E-Bike™ with a mild soap and a sponge. DO NOT use a power hose or washer. Gently rinse with water. Avoid spraying water directly onto the control switches, motor and front hub bearings. Do not spray water inside the battery compartment. Dry the frame mounted electrical connector in the battery compartment before reinstalling the battery pack. Use automotive wax to protect painted surfaces. Lubricate the chain periodically to help prevent corrosion and minimize wear.

3. FIT AND SAFETY

FIT

Make sure the Mini-E-Bike™ fits. A bike that is too big or too small for the rider is harder to control and can be uncomfortable.

WARNING:

If your Mini-E-Bike™ does not fit properly, you may lose control and fall. If your new Mini-E-Bike™ does not fit, ask your dealer to exchange it before you ride it.

Saddle position

Correct saddle adjustment is an important factor in getting the most performance and comfort from your Mini-E-Bike™.

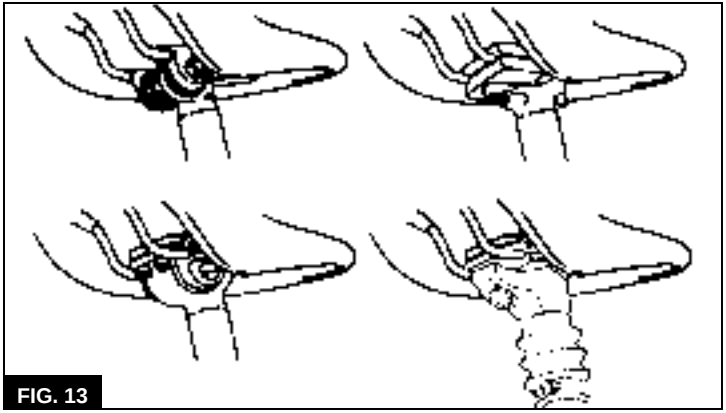


FIG. 13

Your dealer will have positioned the saddle where experience tells him most people find it comfortable. If you find the saddle position is not comfortable, there are three adjustments you can make.(See **Figure 13** to determine the type of saddle attachment used on your Mini-E-Bike™).

a. Up and down adjustment.

Your leg length determines the correct saddle height. The saddle is at the correct height if you can just reach the "down" pedal with one heel when you are seated on the saddle and the crank arms are parallel to the seat tube. To check for correct saddle height, perform the following:

1. Sit on the saddle, and place one heel on a pedal.
2. Rotate the crank until the pedal with your heel on it is in the down position and the crank arm is parallel to the seat tube.
3. Your leg should be completely straight and just touching the center of the pedal. If this is not the case, your saddle height needs to be adjusted.

WARNING:

Be sure the seatpost quick release securely clamps the seatpost to the frame. An improperly adjusted seatpost quick release can produce instability that can cause loss of control and a fall.

To adjust the saddle height, unlock the quick release lever **(Figure 14)** and move the seatpost up or down as required. Make sure that the saddle is parallel to the top tube of the Mini-E-Bike™, and lock the quick release lever so that you cannot twist the saddle out of alignment. Check the adjustment as described above. Under no circumstances should the seatpost project from the frame beyond its "Minimum Insertion" or "Maximum Extension" mark.

WARNING:

If the Minimum Insert mark or the Maximum Extension mark on your seatpost extends beyond the frame, the seatpost may break, which could cause you to lose control and fall.

b. Front and back adjustment

Loosen the saddle clamping mechanism **(see Figure 13)** and slide the saddle back or forward on its rails. Start with the saddle clamped in about the middle, and adjust it forward or back until you find the position which is most comfortable for you. Retighten the saddle clamping mechanism securely.

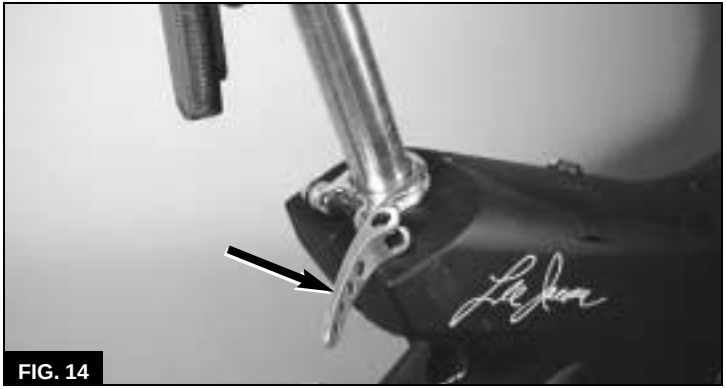


FIG. 14

c. Saddle tilt adjustment

Most people prefer a horizontal saddle; but some riders prefer to have the saddle nose tilted slightly up or down. You can adjust saddle tilt by loosening the saddle clamping mechanism, tilting the saddle to the desired position, and retightening the saddle clamping mechanism tight enough so that you cannot move or jiggle the saddle.

Very small changes in saddle position can have a substantial effect upon performance and comfort. Consequently, whenever you make a change to your saddle position, make only one directional change at a time, and make the changes in small increments until you have found the position at which you are most comfortable.

WARNING:

After any saddle adjustment, be sure to tighten the saddle adjusting mechanism properly before riding. A loose saddle clamp or seatpost binder can cause damage to the seatpost, or can cause you to lose control and fall. A correctly tightened saddle adjusting mechanism will allow no saddle movement in any direction. Periodically check to make sure that the saddle adjusting mechanism is properly tightened.

If, in spite of carefully adjusting the saddle height, tilt, and fore-and-aft position, your saddle is still uncomfortable, you may need a different saddle design. Saddles, like people, come in many different shapes, sizes, and resilience. Your dealer can help you select a saddle which, when correctly adjusted for your body and riding style, will be comfortable.

CAUTION:

Extended riding with a saddle which is incorrectly adjusted or which does not support your pelvic area correctly can cause short-term or long-term injury to nerves and blood vessels. If your saddle causes you pain or numbness, adjust the saddle position and your riding position. If pain or numbness persist, talk to your dealer about fitting a different saddle to your Mini-E-Bike™.

SAFETY EQUIPMENT

WARNING:

Many states require specific safety devices. It is your responsibility to familiarize yourself with the laws of the state where you ride and to comply with all applicable laws, including properly equipping yourself and your Mini-E-Bike™ as the law requires.

WARNING:

Do not remove the reflectors from your Mini-E-Bike™. They are an integral part of the safety system on the Mini-E-Bike™. Removing the reflectors may reduce your visibility to others using the roadway. Being struck by other vehicles often results in serious injury or death.

Eye protection
Any kind of riding involves airborne dirt, dust and bugs, so it's a good idea to always ride with protective eyewear — tinted when the sun is bright, clear when it's not. Most Mini-E-Bike™ shops carry protective fashion eyewear, some with interchangeable lens systems.

MECHANICAL SAFETY CHECK

The mechanical safety check is a simple, sixty-second check you should perform whenever you're about to get on the Mini-E-Bike™.

Nuts, bolts & straps
Lift the front wheel off the ground by two or three inches, and then let it bounce on the ground. Does anything sound, feel or look loose? Do a quick visual and tactile inspection of the whole Mini-E-Bike™. Any loose parts or accessories? If so, secure them. If you're not sure, ask someone with experience to check these items.

Tires & Wheels
Tires correctly inflated? Check by putting one hand on the saddle and one on the intersection of the handlebar. Next, bounce your weight on the Mini-E-Bike™ while looking at tire deflection. Compare what you see with how it looks when you know the tires are correctly inflated. Adjust the tire pressure if necessary.

Tires in good shape? Spin each wheel slowly and look for cuts in the tread and sidewall. Replace damaged tires before riding the Mini-E-Bike™.

Wheels true? Spin each wheel and check for brake clearance and side-to-side wobble. If a wheel wobbles from side to side or hits the brake pads, take the Mini-E-Bike™ to a qualified bike shop to have the wheel trued.

CAUTION:
Wheels must be true for the brakes to work effectively. Wheel truing is a skill which requires special tools and experience. Do not attempt to true a wheel unless you have the knowledge and tools needed to do the job correctly.

Brakes
Squeeze the brake levers. Does the cable guide on the brake cable securely engage the quick release bracket on the left caliper arm **(Figure 15)**? Do the brake pads contact the wheel rim within an inch of brake lever movement? Can you apply full braking force at the levers without having them touch the handlebar? If not, your brakes need adjustment. Do not ride the Mini-E-Bike™ until the brakes are properly adjusted. See Chapter 5 for details.

WARNING:
Riding with improperly adjusted brakes or worn brake pads is dangerous and can result in serious injury or death.

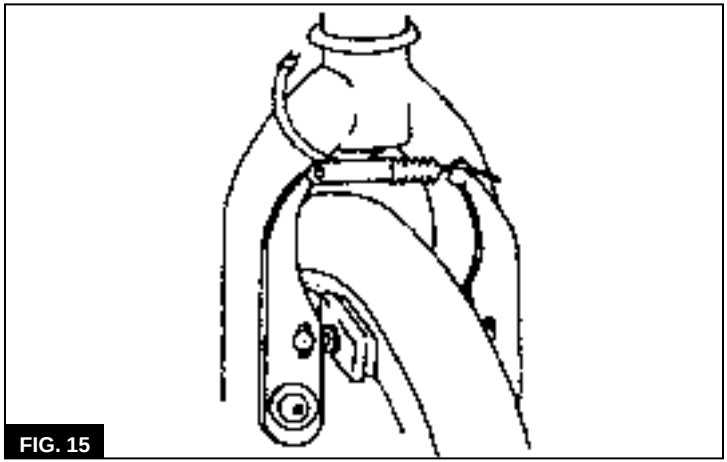


FIG. 15

Quick Release Binders
Are the handlebar and seatpost quick releases binders properly adjusted and in the locked position? Adjust the quick release binders as necessary. See Chapter 2 for details.

Handlebar and saddle alignment
Is the saddle properly aligned with the top tube of the Mini-E-Bike™? Is the handlebar perpendicular to the top tube? Are the binder bolts/quick release tight enough so that you cannot twist them out of alignment?

Handlebar grips
Are the handlebar grips secure and in good condition? If not, replace them. Are the handlebar ends plugged? If not, plug them before you ride.

WARNING :
Loose or damaged handlebar grips can cause you to lose control and fall. Unplugged handlebars can act like a cookie cutter on your body and can cause serious injury in an otherwise minor accident.

4. RIDING SAFELY AND RESPONSIBLY

NOTE:
Like any sport, bicycling involves risk of injury and damage. By choosing to ride an Mini-E-Bike™, you assume the responsibility for that risk. Not the people who sold you the Mini-E-Bike™. Not the people who made it. Not the people who distribute it. Not the people who manage or maintain the roads you ride on. You. So you need to know — and to practice — the rules of safe and responsible riding.

THE BASICS

1. Always perform the mechanical safety check described above before you get on an Mini-E-Bike™.
2. Always wear a helmet which complies with your state laws when riding the Mini-E-Bike™. Check with your local police department for requirements in your community.

3. Keep body parts and other objects away from the sharp teeth of chainring, the moving chain, the turning pedals and cranks, and the spinning wheels of your Mini-E-Bike™.
4. Always wear shoes that will stay on your feet and will grip the pedals. Never ride barefoot or when wearing sandals.
5. Be thoroughly familiar with the controls of your Mini-E-Bike™.
6. Wear bright, visible clothing that is not so loose that it can catch on moving parts of the Mini-E-Bike™ or be snagged by objects at the side of the road or trail.
7. Do not jump with your Mini-E-Bike™. Jumping a Mini-E-Bike™ can be fun; but it puts incredible stress on everything from your spokes to your pedals. Perhaps most vulnerable to jumping-related damage is your front fork. Riders who insist on jumping an Mini-E-Bike™ risk serious damage to the Mini-E-Bike™ as well as to themselves.
8. Think about your speed, and keep your speed at a level which is consistent with conditions. Always keep in mind that there is a direct relationship between speed and control, and between speed and component stress

RULES OF THE ROAD

1. You are sharing the road with others — motorists, pedestrians and other cyclists. Respect their rights, and be tolerant if they infringe on yours.
2. Ride defensively. Assume that the people with whom you are sharing the road are so absorbed with what they are doing and where they are going that they are oblivious to you.
3. Look ahead of where you're going, and be ready to avoid:
- Vehicles slowing or turning in front of you, entering the road or your lane ahead of you, or coming up behind you.
- Parked car doors opening in front of you.
- Pedestrians stepping out in front of you.
- Children playing near the road.
- Pot holes, sewer grating, railroad tracks, expansion joints, road or sidewalk construction, debris and other obstructions that could cause you to swerve into traffic, catch your wheel or otherwise cause you to lose control and have an accident.
- The many other hazards and distractions which can occur on a Mini-E-Bike™ ride.

4. Use hand signals for turning and stopping. Learn the local vehicle code for the correct signals.
5. Never ride with headphones. They mask traffic sounds and emergency vehicle sirens, and they distract you from concentrating on what is going on around you. Their wires can also tangle in the moving parts of the Mini-E-Bike™, causing you to lose control.
6. Never carry a passenger.
7. Never carry anything that obstructs your vision, interferes with your complete control of the Mini-E-Bike™, or could become entangled in the moving parts of the Mini-E-Bike™.
8. Never hitch a ride by holding onto another vehicle.
9. Never perform stunts, wheelies, or jumps. They can cause you injury and damage your Mini-E-Bike™.

10. Do not weave through traffic or make any moves that may surprise people with whom you are sharing the road.
11. Observe and yield the right of way.
12. Never ride your Mini-E-Bike™ while under the influence of alcohol or drugs.
13. If possible, avoid riding in bad weather, when visibility is obscured, or when extremely tired. Each of these conditions increases the risk of accident.

WET WEATHER RIDING

WARNING:
Wet weather impairs traction, braking, and visibility for both the rider and for other vehicles sharing the road. The risk of accident dramatically increases in wet conditions. Wet brakes and wet rims dramatically increase braking distance. Ride more slowly and brake sooner when riding in wet conditions

Under wet conditions, the stopping power of your brakes (as well as the brakes of other vehicles sharing the road) is dramatically reduced and your tires do not grip nearly as well. This makes it harder to control speed and easier to lose control. To make sure that you can slow down and stop safely in wet conditions, ride more slowly and apply your brakes earlier and more gradually than you would under normal, dry conditions.

NIGHT RIDING

Even if you have excellent night vision, many of the people with whom you share the road do not. A rider is very difficult for motorists and pedestrians to see at dusk, at night, or at other times of poor visibility. If at all possible, avoid riding at night. If you must ride under these conditions, check and be sure you comply with all local laws about night riding. Follow the rules of the road even more carefully, and you must take the following additional precautions:

Before riding at dusk or at night, take the following steps to make yourself more visible:

- Make sure that your Mini-E-Bike™ is equipped with correctly positioned and securely mounted reflectors.
- Wear light colored, reflective clothing and accessories, such as a reflective vest, reflective arm and leg bands, reflective stripes on your helmet, flashing lights. Any reflective device or light source that moves will help you get the attention of approaching motorists, pedestrians and other traffic.
- Make sure your clothing or anything you may be carrying on the Mini-E-Bike™ does not obstruct a reflector or light.
- Consider installing an aftermarket headlight/taillight on your Mini-E-Bike™.

While riding at dusk or at night:

- Ride slowly.

- Avoid areas of heavy traffic, dark areas, and roads with speed limits over 35 mph.
- Avoid road hazards.
- If possible, ride on routes already familiar to you.

5. HOW THINGS WORK

It's important to your performance, enjoyment and safety to understand how things work on your Mini-E-Bike™. Even if you are an experienced cyclist, be sure to read — and to understand — this section of the manual. If you have even the slightest doubt as to whether you understand something, talk to your dealer.

REMOVING/INSTALLING THE WHEELS

Removing the Front Wheel

1. Open the front brake pads. (Refer to page 25.)
2. Remove the cap **(**A, **Figure 16)** from each end of the axle bolt.
3. With a 15 mm box wrench or a six-inch adjustable wrench, loosen the two axle nuts **(**B, **Figure 16)** and pull the retention washer away from each dropout.
4. Lift the handlebar so the front wheel is off the ground.
5. Tap the top of the wheel with the palm of your hand to knock the wheel out of the front forks.

Installing the Front Wheel

1. With the steering fork facing forward, set the wheel between the fork blades.
2. Insert the axle into the fork dropouts (the slots at the tip of the fork blade). Be sure that the axle rests against the top of each dropout and that each washer sits outside its fork blade.
3. Press each retention washer toward its fork blade so the tab on the washer engages the hole above the dropout.
4. Use a 15 mm box wrench or a six-inch adjustable wrench to tighten the axle nuts **(**B, **Figure 16)** securely.
5. Fit the cap **(**A, **Figure 16)** onto each end of the axle bolt.
6. Close the brakes.

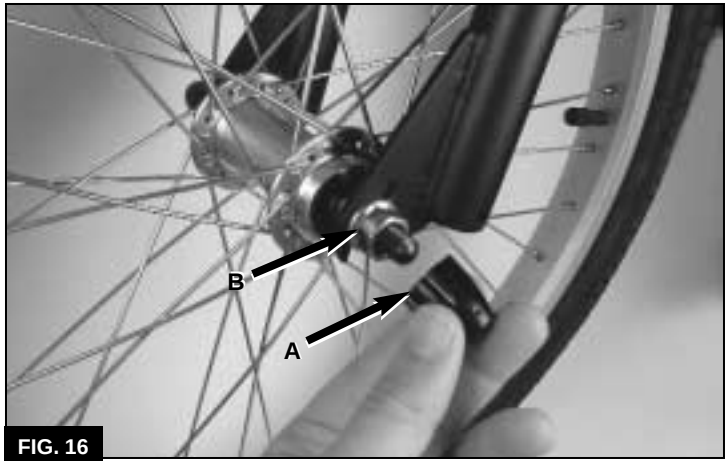


FIG. 16

7. Spin the wheel to make sure it is centered in the frame and that it clears the brake pads.

Removing the Rear Wheel

1. Open the rear brake pads. (Refer to page 25.)

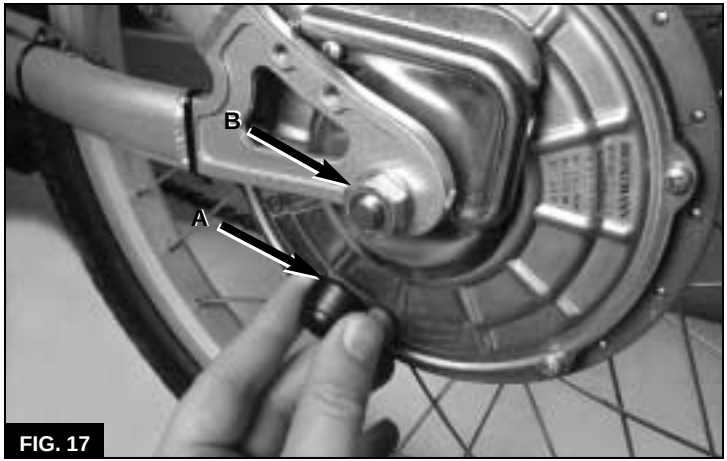


FIG. 17

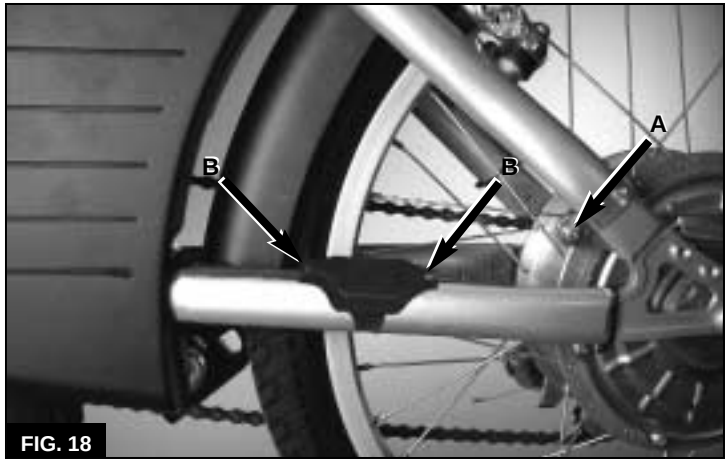


FIG. 18

2. Shift the rear derailleur to high gear (the smallest rear sprocket).
3. Remove the cap **(**A, **Figure 17)** from each end of the axle bolt.
4. With a 17 mm box wrench or a six-inch adjustable wrench, loosen the two axle nuts **(**B, **Figure 17)**.
5. Remove the motor torque arm bolt **(**A, **Figure 18)** from the left side seat stay above the drop out.
6. Release the secondary lock from the post on the QR-connector-housing clasp. Release the strap from the post and lift the QR-connector housing **(**B, **Figure18)** from the left chain stay.
7. Remove the retaining clip from the QR-connector.
8. Disconnect the motor QR-connector and the temperature-sensor connector.
9. Lift the rear wheel off the ground a few inches and pull the derailleur body back with your right hand.
10. With the derailleur still pulled back, push the wheel down until it comes out of the rear dropouts.

Installing the Rear Wheel

1 Shift the rear derailleur to its outermost position and pull the derailleur body back with your right hand.
2. Put the chain on to the smallest sprocket.
3. Insert the wheel into the frame dropouts and pull it all the way into the dropouts. The axle washers should be on the outside of the dropouts, between the frame and the axle nut.
4. Reinstall the motor torque arm and bolt.

5. Tighten the axle nuts **(**B, **Figure 17)** securely, using a six-inch adjustable wrench or a 17 mm box wrench.
6. Install the cap **(**A, **Figure 17)** onto each end of the axle bolt.
7. Push the rear derailleur back into position.
8. Reconnect the motor QR-connector and temperature-sensor connector. Install the retaining clip into the QR-connector.
9. Fit the QR-connector housing over both connectors. Be sure the wires are within the port at each end of the housing **(**B, **Figure 18)**.
10. Wrap the strap tightly around the left chain stay, and secure it to the post on the housing clasp. Press the secondary lock over the post on the housing.
11. Close the brake. Spin the wheel to make sure that it is centered in the frame and clears the brake pads.

BRAKES

NOTE:
For most effective braking, use both brakes and apply them simultaneously.

WARNING:
Sudden or excessive application of the front brake may pitch the rider over the handlebars, causing serious injury or death.

How Brakes Work
The braking action of a Mini-E-Bike™ is a function of the friction between the brake pads and the wheel rim. To make sure that you have maximum friction available, keep your wheel rims and brake pads clean and free of lubricants, waxes, or polishes.

Make sure that your hands can reach and squeeze the brake levers comfortably. If your hands are too small to operate the levers comfortably, consult your dealer before riding the Mini-E-Bike™. You may need a different brake lever design.

Brakes are designed to control your speed, not just to stop the Mini-E-Bike™. Maximum braking force for each wheel occurs at the point just before the wheel locks up (stops rotating) and starts to skid. Once the tire skids, you actually lose most of your stopping force and all directional control. You need to practice slowing and stopping smoothly without locking up a wheel. The technique is called progressive brake modulation. Instead of jerking the brake lever to the position where you think you will generate appropriate braking force, squeeze the lever, progressively increasing the braking force. If you feel the wheel begin to lock up, release pressure just a little to keep the wheel rotating just short of lockup. It is important to develop a feel for the amount of brake lever pressure required for each wheel at different speeds and on different surfaces. To better understand this, experiment a little by walking your Mini-E-Bike™ and applying different

amounts of pressure to each brake lever until the wheel locks.

CAUTION:

The Mini-E-Bike™ brake are extremely powerful. You should take extra care in becoming familiar with these brakes and exercise particular care when using them.

When you apply one or both brakes, the Mini-E-Bike™ begins to slow, but your body wants to continue at the speed at which it was going. This causes a transfer of weight to the front wheel (or, under heavy braking, around the front wheel hub, which could send you flying over the handlebars). A wheel with more weight on it will accept greater brake pressure before lockup; a wheel with less weight will lock up with less brake pressure. So, as you apply brakes and your weight shifts forward, you need to shift your body toward the rear of the Mini-E-Bike™, to transfer weight back onto the rear wheel. At the same time, you need to both decrease rear braking and increase front braking force. This is even more important on steep descents, because descending shifts weight forward.

The keys to effective speed control and safe stopping are controlling wheel lockup and weight transfer. Practice braking and weight transfer techniques where there is no traffic or other hazards and distractions.

Everything changes when you ride on loose surfaces or in wet weather. Tire adhesion is reduced, so the wheels have less cornering and braking traction and can lock up with less brake force. Moisture or dirt on the brake pads reduces their ability to grip. The way to maintain control on loose or wet surfaces is to go more slowly to begin with.

Brake Release

The brake pads of the V-brakes can be quickly opened so the pads can clear the tire when the wheel is removed or installed. To open the front or rear brake pads, perform the following:

1. Squeeze the caliper arms together.
2. Disconnect the cable guide on the brake cable from the quick release bracket on the left caliper arm **(**A, **Figure 19)**.

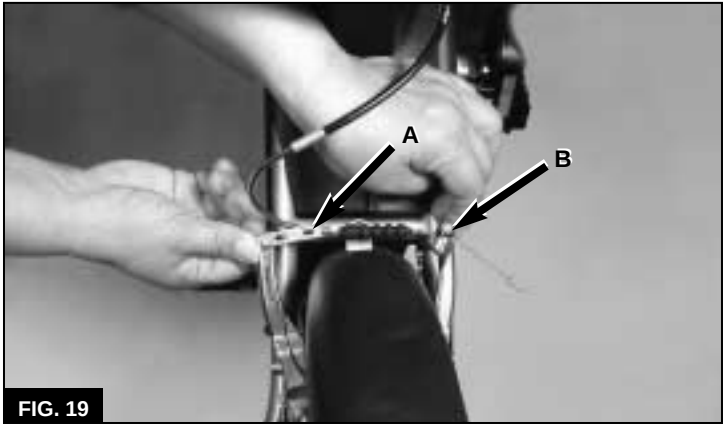
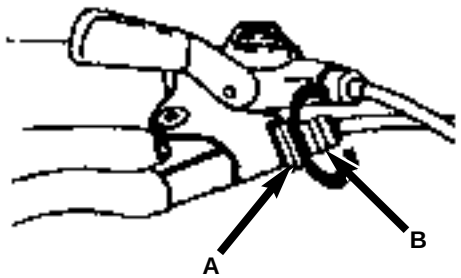


FIG. 19

Once the wheel is reinstalled, close the brake pads by performing the following:
1. Squeeze the caliper arms together.
2. Connect the cable guide to the bracket on the left caliper arm **(**A, **Figure 19)**.

Brake Cable Free Play Adjustment
If either brake lever fails the mechanical safety check, restore brake lever travel by adjusting the brake lever free play as described below.

1. Pull the brake lever to simulate a panic stop, and then release the brake lever. Repeat this at least ten times. This assures that all components are properly seated.
2. Pull the brake lever until the brake pads just touch the rim.
3. Measure the clearance between the brake lever and the handlebar grip. This distance should be 25 mm (0.98 in.)
4. Loosen the adjuster locknut **(**A, **Figure 20)**, and turn the barrel adjuster **(**B, **Figure 20)** as necessary to adjust clearance to within specification. (Turning the adjuster out tightens the inner wire; turning the adjuster in loosens the wire.) When the brake lever is within specification, tighten the adjuster locknut.
5. Squeeze the caliper arms together, and remove the cable guide from the quick release bracket on the left caliper arm **(**A, **Figure 19)**. The brake lever free play is properly adjusted if the cable guide can be easily removed from the bracket.
6. If you cannot easily release the cable guide from the bracket, perform the following:
   a. Turn the adjusting barrel at the brake lever in (clockwise) one full turn. Try to remove the cable guide again.
   b. If you still cannot release the cable guide, turn the adjusting barrel in an additional turn.
   c. If the cable guide still does not release, loosen the pinch bolt **(**B, **Figure 19)** and release 2-3 mm (0.079-0.118 in.) of inner wire from the pinch mechanism.
   d. Tighten the pinch bolt, and repeat the adjusting procedure.



Brake Lever Adjusting Barrel
FIG. 20

SHIFTING

Your five-speed Mini-E-Bike™ uses a derailleur drivetrain, which consists of.

- A rear sprocket cluster, called a freewheel or cogset
- A rear derailleur
- One shifter
- One control cable
- One front sprocket called a chainring
- A drive chain

There are many different types of shifter mechanisms, each preferred for specific applications because of its ergonomic, performance, and price characteristics. The designers of your Mini-E-Bike™ have selected the twist-type shifter design which will give the best results on your Mini-E-Bike™.

To shift to a higher gear, twist the shifter rearward or clockwise while pedaling forward. To shift to a lower gear, twist the shifter forward or counterclockwise. **See Figure 21**.

A downshift is a shift to a lower or slower gear, one which is easier to pedal. An upshift is a shift to a higher or faster gear, one which harder to pedal gear. For example, you can downshift to a lower gear to make pedaling easier on a hill. On the otherhand, you may upshift to a higher gear when you wish to go faster.

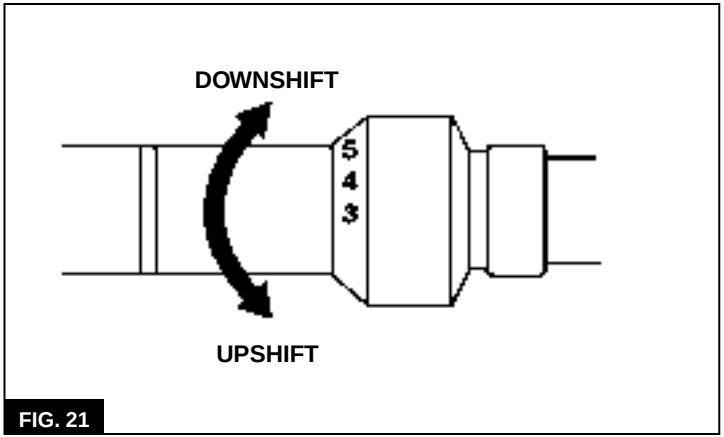


FIG. 21

Whether upshifting or downshifting, the derailleur system requires that the drive chain be moving forward and be under at least some tension. A derailleur will shift only if you are pedaling forward.

CAUTION:

Never move the shifter while pedaling backward. Also do not pedal backwards after moving the shifter. Either of these actions could jam the chain and cause serious damage to the Mini-E-Bike™.

WARNING:
Never shift a misadjusted derailleur onto the largest or the smallest sprocket. The chain could jam, causing you to lose control and fall.

Derailleur Adjustment

The function of the rear derailleur is to move the drive chain from one gear to another on the rear gear cluster, thereby changing gear drive ratios. The smaller sprockets on the gear cluster produce higher gear ratios. Pedaling in the higher gears requires greater pedaling effort, but takes you a greater distance with each revolution of the pedal crank. The larger sprockets produce lower gear ratios. Using them requires less pedaling effort, but takes you a shorter distance with each pedal crank revolution.

Moving the chain from a smaller sprocket of the gear cluster to a larger sprocket results in a downshift. Moving the chain from a larger sprocket to a smaller sprocket results in an upshift. In order for the derailleur to disengage the chain from one sprocket and move it on to another, the chain must be moving forward (i.e. the rider must be pedaling forward).

Three screws, the H-, L-, and B-screws, are used to adjust the derailleur. The H-screw sets the outward limit of the derailleur's movement. The L-screw sets its inward limit. The B-screw adjusts the distance between the bottom of the cogset and the derailleur's guide pulley.

A fourth-hand tool (Park Tool BT-2) and a torque wrench are required to perform this procedure.

1. Check the cable attachment to the derailleur pinch mechanism.
   a. Inspect the position of the inner wire in the pinch-mechanism. The inner wire should follow the groove in the pinch plate, and the tab on the pinch plate should be inboard of the cable when you look directly at the pinch-mechanism stud **(Figure 22)**.
   b. Loosen the pinch-mechanism nut. Use the fourth-hand tool to pull the slack from the inner wire.
   c. Torque the pinch-mechanism nut to 42 kg-cm (36.5 in.-lb.)
   d. Check that the inner cable is still contained within the groove in the pinch-mechanism plate.

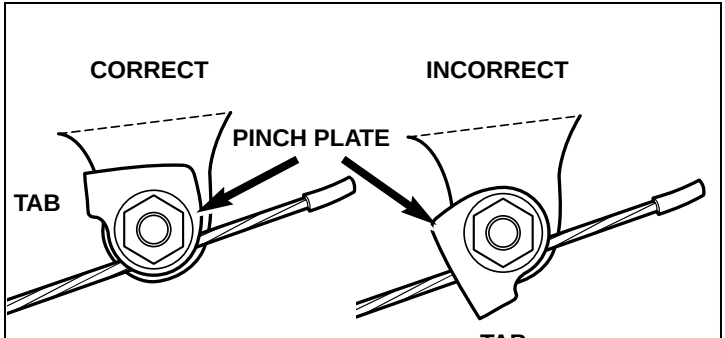


FIG. 22

2. Set the derailleur as close as possible to the cogset by performing the following.
   a. Shift the chain to the innermost cog.
   b. Completely loosen the B-screw **(Figure 23)**.
   c. Back-pedal, and check for bouncing at the guide pulley **Figure 24)**. The B-screw is too loose if bouncing is noticed.
   d. Tighten the B-screw one turn, and repeat the bounce check.
3. Set the derailleur's outward limit by performing the following.
   a. Shift the derailleur so the chain is on the outermost cog.
   b. Stand behind the Mini-E-Bike™, and check the position of the derailleur. The guide pulley should align with the outermost cog as shown in **Figure 25**.
   c. If necessary, adjust the outward limit by turning the H-screw. Tighten the H-screw to adjust the guide pulley inward. Loosen the H-screw to adjust the derailleur outward.
4. Set the derailleur's inward limit by performing the following.
   a. Shift the derailleur so the chain rests on the innermost cog.
   b. Stand behind the Mini-E-Bike™, and check the position of the derailleur. The guide pulley should align with the innermost cog as shown in **Figure 26**.
   c. If necessary, adjust the inward limit by turning the L-screw. Tighten the L-screw to move the derailleur outward. Loosen the L-screw to move the derailleur inward.

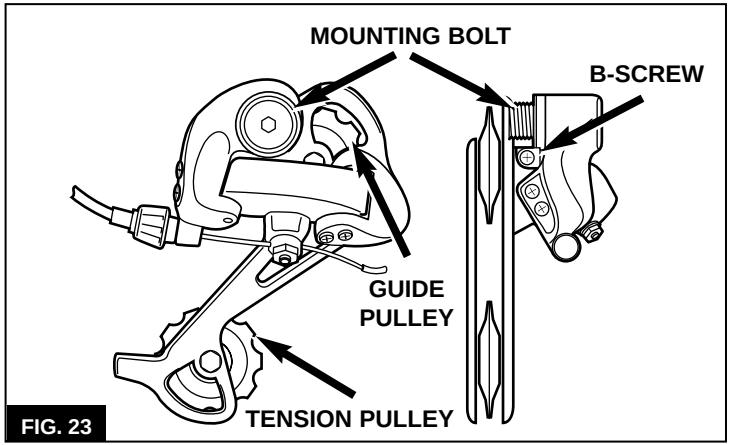


FIG. 23

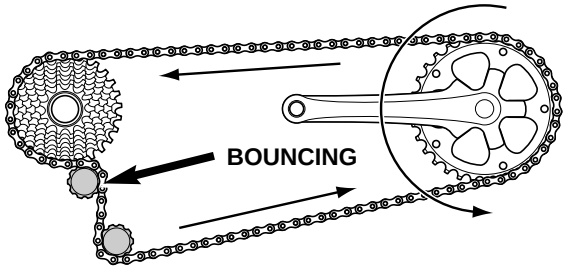


FIG. 24

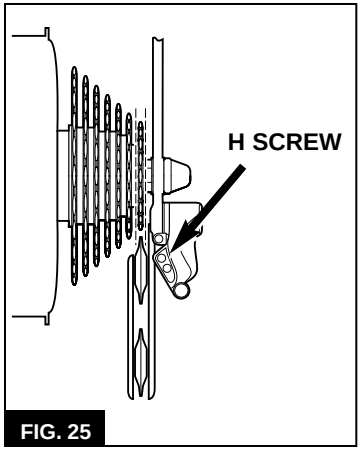


FIG. 25

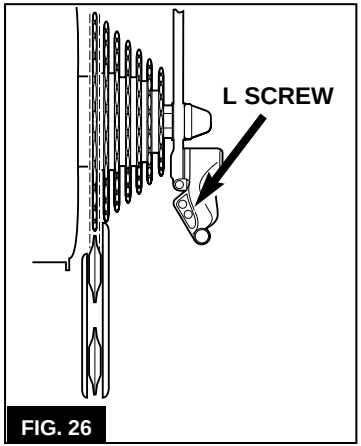


FIG. 26

TIRES AND TUBES

Tires

Bicycle tires are available in many designs and specifications, ranging from general-purpose tires to those designed to perform best under very specific weather or terrain conditions. Your Mini-E-Bike™ has been equipped with tires that the manufacturer feels provides the best balance between performance and value for the bike's intended use. If, once you've gained experience with your new Mini-E-Bike™, you feel that a different tire might better suit your riding needs, your dealer can help you select the most appropriate design.

The size, pressure rating, and other information appear on the sidewall of the tire **(Figure. 27)**. The part of this information which is most important to you is tire pressure. Inflate the tires to 40-65 psi. Note that best performance is achieved when tires are inflated to 60-65 psi. These recommendations apply only to the OEM tires that were originally installed on your Mini-E-Bike™. If you use another tire, follow the inflation-pressure recommendations marked on the tire sidewall.

WARNING:

Never inflate a tire beyond the maximum pressure marked on the tire's sidewall. Exceeding the recommended maximum pressure may blow the tire off the rim, which could cause damage to the Mini-E-Bike™ and injury to the rider and bystanders.

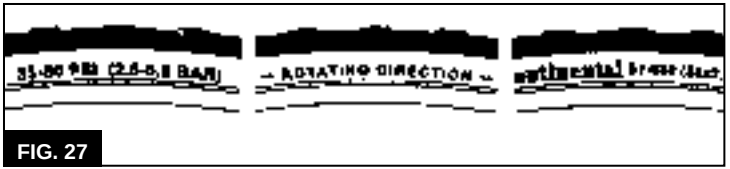


FIG. 27

The best way to inflate a Mini-E-Bike™ tire to the correct pressure is with a bike pump. Your dealer can help you select an appropriate pump.

CAUTION:

Gas station air hoses move a large volume of air very rapidly and will raise the pressure in your tire very rapidly. To avoid overinflation when using a gas station air hose, put air into your tire in short, spaced bursts.

Tire pressure is given either as maximum pressure or as a pressure range. How a tire performs under different terrain or weather conditions depends largely upon tire pressure. Inflating the tire to near its maximum recommended pressure gives the lowest rolling resistance; but also produces the harshest ride. High pressures work best on smooth, dry pavement.

Very low pressures, at the bottom of the recommended pressure range, give the best performance on smooth, slick terrain such as hard-packed clay, and on deep, loose surfaces such as deep, dry sand.

Please note, however, tire pressure that is too low for your weight and the riding conditions can cause rim or tire damage.

CAUTION:

Pencil type automotive tire gauges and gas station air hose pressure settings are generally inaccurate and should not be depended upon for consistent, accurate pressure. Instead, use a good quality dial gauge.

Ask your dealer to recommend the best tire pressure for the kind of riding you will most often do, and have the dealer inflate your tires to that pressure. Then check inflation as described so you will know how correctly inflated tires should look and feel. Some tires may need to be brought up to pressure every week or two.

Some special high-performance tires have unidirectional tread. Their tread pattern is designed to work better in one direction than in the other. The sidewall marking of a unidirectional tire have an arrow showing the correct rotation direction. If you use unidirectional tires on your Mini-E-Bike™, be sure that they are mounted to rotate in the correct direction.

Tire Valves

The tire valve allows air to enter the tire's inner tube under pressure, but doesn't let it back out unless you want it to. There are primarily two kinds of bicycle tube valves used in the United States: the Schraeder Valve and the Presta Valve. The bicycle pump you use must have the fitting appropriate to the valve stems on your tire.

The Mini-E-Bike™ OEM tires use a Schraeder valve **(Figure 28)**, which is like the valve on a car tire. To inflate a Schraeder valve tube, remove the valve cap and push the air hose or pump fitting onto the end of the valve stem. To let air out of a Schraeder valve, depress the pin in the end of the valve stem with the end of a key or other appropriate object.

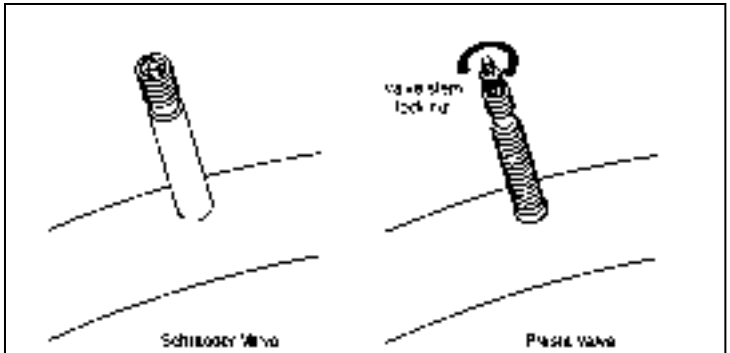


FIG. 28

6. SERVICE AND MAINTENANCE

NOTE:

Technological advances have made the Mini-E-Bike™ and Mini-E-Bike™ components more complex than ever before. And the pace of innovation is increasing. This on-going evolution makes it impossible for this manual to provide all the information required to properly repair and/or maintain your Mini-E-Bike™. In order to help minimize the chances of an accident and possible injury, it is critical that you have any repair or maintenance which is not specifically described in this manual performed by your dealer.

Equally important is that your individual maintenance requirements will be determined by everything from your riding style to geographic location. Consult your dealer for help in determining your maintenance requirements. How much of your Mini-E-Bike™ service and maintenance you can do yourself depends upon your level of skill, experience, and special tool availability.

WARNING:

Many Mini-E-Bike™ service and repair tasks require special knowledge and tools. Do not begin any adjustments or service on your Mini-E-Bike™ if you have the slightest doubt about your ability to properly complete them. Improper adjustment or service may result in damage to the Mini-E-Bike™ or in an accident which can cause serious injury or death.

If you want to learn to do major service and repair work on your Mini-E-Bike™, you have four options:

1. Order an Mini-E-Bike™ service manual from your dealer.
2. Ask your dealer whether copies of the manufacturer's installation and service instructions for the components on your Mini-E-Bike™ are available.
3. Ask your dealer to recommend a book on bicycle repair.
4. Ask your dealer about the availability of Mini-E-Bike™ repair courses in your area. Regardless of which option you select, we recommend that you ask your dealer to check the quality of your work the first time you work on something and before

you ride the Mini-E-Bike™, just to make sure that you did everything correctly. Since that will require the time of a mechanic, there may be a modest charge for this service.

SERVICE & MAINTENANCE SCHEDULE

Some service and maintenance can and should be performed by the owner, and require no special tools or knowledge beyond what is presented in this manual.

The following are examples of the type of service you should perform yourself. All other service, maintenance and repair should be performed in a properly equipped facility by a qualified Mini-E-Bike™ mechanic using the correct tools and procedures specified by the manufacturer.

Break-in Period

Your Mini-E-Bike™ will last longer and work better if you break it in before riding it hard. Control cables and wheel spokes may stretch or seat when a new Mini-E-Bike™ is first used and may require readjustment by your dealer. Your mechanical safety check (Chapter Three) will help you identify some things that need readjustment. But even if everything seems fine to you, it s best to take your Mini-E-Bike™ back to the dealer for a checkup. Dealers typically suggest you bring the Mini-E-Bike™ in for a 30 day checkup. Another way to judge when it s time for the first checkup is to bring the Mini-E-Bike™ in after 10 to 15 hours of use. But if you think something is wrong with the Mini-E-Bike™, take it to your dealer before riding it again.

Before every ride:

- Perform the mechanical safety check described in Chapter Three.

After every long or hard ride; if the Mini-E-Bike™ has been exposed to water or grit; or at least every 100 miles:

- Clean the Mini-E-Bike™.
- Lightly oil the chain, freewheel cogs and rear derailleur pulley bushings. Wipe off excess oil. Lubrication is a function of climate. Talk to your dealer about the best lubricants and the recommended lubrication frequency for your area.
- Recharge the battery immediately after use.

After every long or hard ride or after every 10 to 20 hours of riding:

- Squeeze the front brake and rock the Mini-E-Bike™ forward and back. Does everything feel solid? If you feel a clunk with each forward or backward movement of the Mini E-Bike™, you probably have a loose headset. Have your dealer check it.
- Lift the front wheel off the ground and swing it from side to side. Feel smooth? If you feel any binding or roughness in the steering, you may have a tight headset. Have your dealer check it.
- Make sure all bolts, nuts and mounting hardware are tight.

CAUTION:

Since the right pedal on your Mini-e folds up, grasp the crank arm when performing this check on the right side.

- Grab one pedal and rock it toward and away from the centerline of the Mini-E-Bike™; then do the same with the other pedal. Does the bottom bracket feel loose? If so, have your dealer check it.
- Take a look at the brake pads. Starting to look worn or not hitting the wheel rim squarely? Time to have the dealer adjust or replace them.
- Carefully check the control cables and cable housings. Any rust? Kinks? Fraying? If so, have your dealer replace them.
- Squeeze each adjoining pair of spokes on either side of each wheel between your thumb and index finger. Do they all feel about the same? If any feel loose, have your dealer check the wheel runout and spoke tension..
- Check to make sure that all parts and accessories are still secure. Tighten any which are not.
- Recharge the battery immediately after use.

WARNING:

Like any mechanical device, a Mini-E-Bike™ and its components are subject to wear and stress. Different materials and mechanisms wear at different rates and have different life cycles. If a component's life cycle is exceeded, the component can suddenly and catastrophically fail, causing serious injury or death to the rider. Scratches, cracks, fraying and discoloration are signs of stress-caused fatigue and indicate that a part is at the end of its useful life and should be replaced.

As required:

- If either brake lever fails the mechanical safety check adjust the brake lever free play as described in Chapter Five. If the lever free play cannot be adjusted within specification, have the brakes checked by your dealer.
- If the chain will not shift smoothly and quietly from gear to gear, the derailleur is out of adjustment. The cause may be as simple as cable stretch, in which case you can compensate by turning the shifter or derailleur cable adjusting barrel counterclockwise 1/2 turn. Try shifting again. If turning the cable adjusting barrel 1/2 turn to a full turn does not cure the problem, see your dealer.

Every 50 hours of riding:

- Take your Mini-E-Bike™ to your dealer for a complete checkup.

GETTING HOME WHEN SOMETHING BREAKS

Unless you are going for a short ride in the neighborhood and can walk home or call someone to pick you up if something breaks, you should never go for a Mini-E-Bike™ ride without the following emergency equipment:

- 2.5 mm and 5 mm Allen wrenches, used to tighten various clamping bolts that may loosen.
- Patch kit and a spare inner tube.
- Tire levers.
- Tire pump or cartridge inflator with correct head to fit your tire valves (see Chapter Five).
- Some kind of identification (so people know who you are in case of accident).
- A couple of dollars in cash (for a candy bar, cool drink or emergency phone call).

Flat Tire

If you get a flat tire, remove the wheel as described in Chapter Five. Depress the tire valve to let all the air out of the tube. Remove one bead of the tire from the rim by grasping the tire at a point opposite the valve stem with both hands and lifting and peeling one side of the tire off the rim. If the bead is on too tight for you to unseat it with your hands, use tire levers to lift the bead carefully over the tire rim. Push the valve stem through the wheel rim. Remove the inner tube.

Carefully check the outside and inside of the tire for the cause of the puncture and remove the cause if it is still there. If the tire is cut, line the inside of the tire in the area of the cut with something handy — tape, a spare patch, a piece of inner tube, a dollar bill — whatever will keep the cut from pinching the inner tube.

Either patch the tube (follow the instructions in your patch kit), or use a new tube. Reinstall the tire and tube. Slip one tire bead over the rim. Insert the tube valve through its hole in the rim. Feed the tube carefully into the cavity of the tire. Inflate the tube just enough to give it some shape. Starting at the valve stem use your thumbs to seat the tire bead inside the rim. Work your way around both side of the wheel until the entire bead is seated in the rim. Be careful not to pinch the tube between the tire bead and the wheel rim. If you have trouble getting the last few inches of bead over the edge of the rim with thumb pressure, use a tire lever and be careful not to pinch the tube.

CAUTION:
If you use a screwdriver or any tool other than a tire lever, you are likely to puncture the tube.

Check to make sure the tire is evenly seated around both sides of the rim and that the tube is inside the tire beads. Push the valve stem into the tire to make sure that its base is seated within the tire's beads. Inflate the tube slowly to the recommended pressure, all the while checking to make sure that the tire beads stay seated in the rim. Replace the valve cap, and install the wheel onto the Mini-E-Bike™.

WARNING:

Riding your Mini-E-Bike™ with a flat or under-inflated tire can seriously damage the tire, tube and Mini-E-Bike™, and can cause you to lose control and fall.

Broken Spoke

A wheel with a loose or broken spoke is much weaker than a fully tensioned wheel. If you break a spoke while on a ride, you will have to ride home much more slowly and carefully because the weakened wheel could break additional spokes and become useless.

WARNING:

A broken spoke seriously weakens the wheel and may cause it to wobble, striking the brakes or the frame. Riding with a broken spoke can cause you to lose control and fall.

Twist the broken spoke around the spoke next to it to keep it from flopping around and getting caught between the wheel and the frame. Spin the wheel to see if the rim clears the brake pads. If the wheel will not turn because it is rubbing against a brake pad, try turning the brake cable adjusting barrel(s) clockwise to slacken the cable and open up the brakes. If the wheel still won't turn, open the brake's quick release and secure any loose cable as best you can. Walk the Mini-E-Bike™, or if you must, ride it with extreme caution, because you now have only one working brake.

IF YOU CRASH

WARNING:

A crash can put extraordinary stress on Mini-E-Bike™ components, causing them to fatigue prematurely. Components suffering from stress fatigue can fail suddenly and catastrophically, causing loss of control, serious injury or death.

First, check yourself for injuries, and take care of them as best you can. Seek medical help if necessary. Next, check your Mini-E-Bike™ for damage, and fix what you can. When you get home, carefully perform the checks described in Chapter Three, and check for any other damaged parts. All bent, scored or discolored parts are suspect and should be replaced.

CAUTION:

If you have any doubt about the condition of the Mini-E-Bike™ or any of its parts, take it to your dealer for a thorough check.

UPGRADING YOUR BIKE AND YOUR EQUIPMENT

The variety of components and accessories available to enhance the comfort, performance and appearance of your Mini-E-Bike™ is almost endless. Your dealer can help you select those that will work best for the kind of riding you do.

Even if you are an experienced rider, read and understand the instructions that accompany the products you purchase for your Mini-E-Bike™. If you have the slightest doubt as to their suitability or about your ability to install them correctly, ask your dealer for help.

WARNING:
Failure to install and operate any component or accessory properly can result in severe damage to the Mini-E-Bike™ and serious injury or death to the rider.

Comfort and Convenience Accessories

Once the Mini-E-Bike™ fit (frame size, saddle position and angle, stem length and rise) is correct, the saddle becomes the single most important comfort accessory.

The comfort of a Mini-E-Bike™ saddle depends much more on how the saddle shape relates to the rider's body than on the thickness or material of the padding. Bicycle manufacturers select a saddle shape based on their best guess of what's likely to be comfortable for most buyers of that particular model. But that doesn't mean it's going to be the most comfortable shape for you. That's why your dealer stocks saddles which offer a variety of shapes, padding, covering materials and prices. If the saddle on your new Mini-E-Bike™ is uncomfortable, ask your dealer to suggest an alternative.

If you're planning to spend an hour or more at a time on your Mini-E-Bike™, get a pair of cycling gloves. Their padded palms help keep your hands from getting numb from the vibration of the handlebars (the numbness, called carpal tunnel syndrome, can become quite painful if not taken care of), and they'll provide some abrasion protection for your hands if you fall.

Cycling shorts and cycling jerseys are both performance and comfort accessories. There are two kinds of cycling shorts: the traditional skin-tight Lycra shorts and loose-fit cycling shorts. Both are designed to reduce friction and chafing. The washable pad in the crotch of the shorts both cushions and protects against chafing. Wear them without underwear to avoid undergarment bunching up and chafing. Also available are undergarments designed to reduce chafing when worn with regular street clothes. The jerseys have pockets in the back, so that the things you carry don't bang around when you ride. Many are made of special materials with properties that improve riding comfort and performance.

It's important to drink plenty of liquids before and during exercise. A water bottle is an essential companion on a longer ride.

Some basic tools are also useful. The minimum tool kit you will need to make adjustments, perform maintenance and handle emergency repairs should include:

- A set of Allen wrenches in 2.5 mm, 4 mm, 5 mm and 6 mm sizes.
- A set of tire levers.

- A 6-inch adjustable wrench.
- A No.1 Phillips screwdriver and a 1/4 inch flat blade screwdriver.
- A tire pump.
- A tire patching kit and a spare tire tube.

Performance Upgrades

CAUTION:
Changing the components on your Mini-E-Bike™ may void the warranty. To avoid voiding your warranty, check with your dealer before changing the components on your Mini-E-Bike™.

The most popular way to improve the performance of a Mini-E-Bike™ is to substitute higher priced drivetrain or brake components. Before attempting to upgrade your drivetrain or brakes, make sure that the components you plan to install are fully compatible with the rest of the components on your Mini-E-Bike™. Your dealer can help you determine component compatibility and resolve compatibility conflicts.

Another popular way to improve the performance of a Mini-E-Bike™ is to substitute lighter weight racing components. Lighter wheels, tires, handlebars and so on can enhance the performance of your Mini-E-Bike™; but you must always keep in mind that light weight racing components are not intended to have the life expectancy of their heavier counterparts, and you must therefore exercise extra care in checking for signs of stress fatigue.

Suspension forks are also a popular component upgrade. Before installing a suspension fork on a Mini-E-Bike™ or installing a fork with different travel or geometry characteristics, you must make sure that the frame is designed to take the change in geometry and the changes in stress characteristics which the change in fork can cause. Such stresses can result in sudden, catastrophic frame failure, which can cause serious injury or death.

Disc brakes are becoming a more common performance upgrade. Most front suspension forks are designed to accept a disc brake, and can take the added stresses at the brake mounting points. Be sure that the fork you are using is designed to accept disc brakes. Otherwise, such stresses can result in sudden, catastrophic frame failure, which can cause serious injury or death.

Your dealer has many other comfort and performance accessories that can increase your cycling enjoyment.

ABOUT YOUR DEALER

Your dealer is there to help you get the Mini-E-Bike™ and accessories which are most appropriate for the kind of riding that you intend to do and to help you maintain your

equipment so that you can get the maximum enjoyment from it. The shop's staff has the knowledge, tools and experience to give you reliable advice and competent service. Your dealer carries the products from a variety of manufacturers so that you can choose those that meet your needs and your budget.

But your dealer's staff can't make decisions for you; nor can they assume responsibility for your lack of knowledge, experience, skill or common sense. They can explain how something works, or what part or accessory will meet your special needs, but they cannot know your questions or your needs unless you tell them.

If you have a problem with your Mini-E-Bike™ or your riding, talk to your dealer. Make sure that the dealer understands your problem or question, and make sure that you really understand the answers.

Please contact EV Global Motors at:
800-871-4545 toll-free
818-756-0563 fax
www.evglobal.com or www.ebike.com

7. SPECIFICATIONS

1. Electrical Specifications:

Battery	24 VDC, 8-amp hour, rechargeable, deep discharge, sealed AGM lead-acid
Battery life	Over 250 recharge cycle-life (70% maximum capacity at termination of useful life)
Charger	
Input	95-250 VAC, 50/60 Hz, 1.0 amp
Output	24 VDC, 1.5 amp
PAS Controller	
Input voltage	24 VDC
Output voltage	24 VDC
Operating temperature	0-85 degrees C (32-185 degrees F) with thermo switch interface
Operating humidity	20-80%

2. Mechanical Specifications:

Gear Ratio	Chainring	Freewheel	Ratio
	36T	14T	0.389
	36T	16T	0.445
	36T	18T	0.500
	36T	21T	0.583
	36T	24T	0.667
Crank Arms	152 mm (6.0 inches)		
Chain	1/2 x 3/32 x 108 L		
Tires	20 x 195		
Inflation pressure	40-65 psi (best performance @ 60-65 psi)		
Rims	20 x 1.5 inch, double wall		
Rear	36 H, 14 gauge stainless spokes		
Front	36 H, 14 gauge stainless spokes		
Bottom bracket	129.5 mm cartridge		

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P/N: LIT-51000-01-B2